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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,750	10/18/2005	Fusao Sekiguchi	KAW 147	6127
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EXAMINER KARACSONY, ROBERT				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/553,750

Applicant(s)

SEKIGUCHI ET AL.

Examiner

ROBERT KARACSONY

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

0553750DETAILED ACTION

1. This Office Action is in response to amendments received August 25, 2008. Claims 2-7 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 2, 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Kane* in view of *Holshouser et al.* (US 6,229,489, hereinafter *Holshouser*).

Claim 3: *Kane* teaches a variable tuning antenna comprising:

a radiation element (127); and

a tuning circuit (131, 136, 137) connected to the radiation element in series, the tuning circuit comprising

a first inductance element (131) and

a parallel circuit (136, 137) which is connected to the first inductance element in series, the parallel circuit comprising

a second inductance element (136) and

a variable capacitance element (137) connected to each other in parallel, wherein the tuning circuit is set so that a combined reactance of the radiation element and the first inductance element and a combined reactance of the parallel circuit are canceled by each other (col. 5/lines 49-53), and

the parallel circuit does not resonate in a desired receiving frequency band (since the antenna of *Kane* is functional in the frequency band, the parallel circuit must necessarily not resonate in a desired frequency band), and wherein

the tuning circuit is formed so as to be tunable in the desired frequency band by varying the capacitance of the variable capacitance element (col. 5/lines 17-21).

Kane fails to teach the radiation element comprises a first antenna element and a second antenna element connected to each other electrically in series, the first antenna element and the second antenna element being connected to a feeding part through the tuning circuit, and being formed in an electric length so as to resonate at a frequency within the desired frequency band by the total length, and so as to resonate at a first frequency band of a wide band in the desired frequency band with the tuning circuit, and a connecting part of the first antenna element and the second antenna element being directly connected to the feeding part without the tuning circuit, so as to resonate at a second frequency band, which is different from the first frequency band, by only the first antenna element. However, *Holshouser* teaches a retractable dual-band antenna which uses both the rod and a helical antenna to resonate when extended and uses only the helical antenna when retracted (col. 4/lines 15-25). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the combined antenna, rod and helical antenna, of *Holshouser* as the antenna of *Kane* in order to have utilized a dual frequency bands.

Claim 2: *Kane* teaches the variable capacitance element comprises two variable capacitance diodes (137, 137'), the two variable capacitance diodes being connected in series in

reverse polarity, and having a terminal of a control voltage (19) connected to a connecting part of the two variable capacitance diodes.

Claim 4: *Kane* in view of *Holshouser* teach all of the limitations of claim 3, as discussed above. They fail to teach the first frequency band is a frequency band of a digital TV. However, it was well known to someone of ordinary skill in the art at the time the invention was made that the resonance frequency at which an antenna is to be used can be selected to be whatever resonance frequency needed for its intended use. Therefore, it would have obvious to have adjusted the parameters of the antenna of *Kane* to resonate at a frequency band of digital TV since it was well known at the time of the invention that the resonance frequency at which an antenna is to be used can be selected to be whatever resonance frequency needed for its intended use. Also, the limitation is considered a suggested use limitation and is not given any patentable weight. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex Parte Masham*, 2 USPQ F.2d 1647 (1987).

4. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Kane* in view of *Holshouser* as applied to claim 3 above, and further in view of *Ryou et al.* (US 7,132,998, hereinafter *Ryou*).

Claim 5: *Kane* in view of *Holshouser* teach all of the limitations of claim 3, as discussed above, as well as, a portable wireless device comprising: a transmitting/ receiving circuit, a casing surrounding the transmitting/receiving circuit, a feeding part located near to the casing and connected to the transmitting/receiving circuit electrically (all of the elements are inherently present in mobile phones) the variable tuning antenna comprising a tuning circuit and a radiation

element which are connected to the feeding part (antenna of claim 3). They fail to teach a third antenna element connected to the feeding part, wherein the third antenna element comprises an antenna resonating at a third frequency band different from that of the variable tuning antenna, so that two frequency bands of a first frequency band of a wide band obtained by the variable tuning antenna and the third frequency band can be transmitted and received. However, *Ryou* teaches a triple band antenna comprising a double helical coil mounted on the case of a terminal, a rod and another helical coil at the top end of the rod (see fig. 10d). Therefore, it would have obvious to have used the triple band antenna of *Ryou* as the antenna of *Kane* in order to have utilized three resonance frequency bands.

Claim 6 is similar in scope as claim 3 and is therefore rejected for substantially the same reasons.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Kane* in view of *Holshouser* and *Ryou* as applied to claim 6 above, and further in view of *Kanayama et al.* (US 5,861,859, hereinafter *Kanayama*).

Claim 7: *Kane* in view of *Holshouser* and *Ryou* teach all of the limitations of claim 6, as discussed above. They fail to teach the first antenna element and the third antenna element are formed in an electrical length so as to resonate at the same frequency band and the first antenna element and the third antenna element are adjusted so as to strengthen radio waves transmitted and received in phase with each other. However, *Kanayama* teaches a retractable antenna comprising two helical antennas, one mounted to the phone and one attached to the top of a whip antenna, that when the antenna is retracted the two helical antennas radiate in the same band with improved sensitivity (col. 9/lines 54-60). Therefore, it would have been obvious to one of

ordinary skill in the art at the time the invention was made to have combined the teachings of *Kanayama* with the modified invention of *Kane* in order to have improved the sensitivity of the antenna.

Response to Arguments

6. Applicant's arguments filed August 25, 2008 have been fully considered but they are not persuasive.
7. Regarding the arguments on page 9, lines 4-9 of the Remarks, that “*Holshouser* also fails to teach or suggest a variable tuning antenna with first and second antenna elements in series and formed “so as to resonate at a first frequency band of a wide band in the desired frequency band with the tuning circuit” and “so as to resonate at a second frequency band, which is different from the first frequency band, by only the first antenna element””; Examiner respectfully disagrees with Applicant. Firstly, *Holshouser* teaches “in the extended position, the antenna 10 performs as a half-wave monopole with a small series reactance at 800Mhz...” (see fig. 4A and col. 4/lines 16-18). Secondly, *Holshouser* teaches “in a retracted position, the helical coil 17 of the antenna 10 performs ... as a quarter-wave monopole at 1900Mhz with the parasitic element 18”, (see col. 4/lines 20-24). Therefore, the antenna of *Holshouser*, when extended, operates in a first frequency band (800Mhz) with helical 17 and linear rod 12 and tuning element (see fig. 4A), and, when retracted, operates in a second frequency band (1900Mhz), different than the first frequency band, with the helical portion 17 and parasitic element 18.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **ROBERT KARACSONY** whose telephone number is (571)270-1268. The examiner can normally be reached on M-F 7:30 am - 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W. Owens can be reached on 571-272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. K./
Examiner, Art Unit 2821

/Hoang V Nguyen/
Primary Examiner, Art Unit 2821